

REMARKS

By this Amendment, claims 1-7 are cancelled, and claims 8-16 are added. Thus, claims 8-16 are active in the application. Reexamination and reconsideration of the application are respectfully requested.

The specification and abstract have been carefully reviewed and revised in order to correct grammatical and idiomatic errors in order to aid the Examiner in further consideration of the application. The specification was also revised to individually describe each of Figures 11(a) and 11(b) in the Brief Description of the Drawings section of the specification, as required by the Examiner in item 4 on page 2 of the Office Action.

The amendments to the specification and abstract are incorporated in the attached substitute specification and abstract. No new matter has been added.

Also attached hereto is a marked-up version of the substitute specification and abstract illustrating the changes made to the original specification and abstract.

The Applicants note that the Examiner also required that a description of Figures 14(a) and 14(b) be added to the Brief Description of the Drawings section of the specification because the Examiner believed that the specification lacked a description of these drawings in the Brief Description of the Drawings section. The Applicants direct the Examiner's attention to the Preliminary Amendment filed on December 20, 2001, which added the following description of Figures 14(a) and 14(b) to the Brief Description of the Drawings section of the specification: "Figure 14(a) is a diagram illustrating coded image data of plural image sequences, and figure 14(b) is a diagram illustrating a video stream in which the coded image data are multiplexed." Accordingly, in view of the already added description of Figures 14(a) and 14(b) via the December 20, 2001 Preliminary Amendment, the specification has not be revised to add a description of these drawings to the Brief Description of the Drawings section.

In view of the above-described revisions to the specification, the Applicants respectfully request withdrawal of the objections to the specification.

In item 2 on page 2 of the Office Action, the Examiner asserted that the title of the invention is not descriptive. Thus, the Examiner required a new title of the invention that is clearly indicative of the invention to which the claims are directed.

In response to this requirement, the title of the invention has been revised to 'Image Decoding Apparatus and Image Decoding Method For Decoding Image Data Including Plural Image Sequences, and Program Storage Medium.' The Applicants respectfully submit that the revised title of the invention is clearly indicative of the inventions to which the claims are directed. Accordingly, the Applicants respectfully request approval of the revised title of the invention.

In item 5 on page 2 of the Office Action, claims 1-7 were rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the Applicants regard as the invention. In particular, the Examiner pointed out examples of limitations that lacked proper antecedent basis because the initial recitation of some limitations was preceded by 'the' or 'said.' This rejection is believed to be moot in view of the cancellation of claims 1-7.

New claims 8-15 have been drafted in such a way so as to provide proper antecedent basis for all of the limitations recited therein and to particularly point out and distinctly claim the subject matter which the Applicants regard as the invention.

In item 8 on page 3 of the Office Action, claims 1-7 were rejected under 35 U.S.C. § 102(a) and/or 35 U.S.C. § 102(b) as being unpatentable over the Applicants' admitted prior art (AAPA), as disclosed on pages 1-12 of the original specification and in Figures 11(a)-14(b). Further, in item 15 on page 4 of the Office Action, claims 1-7 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the AAPA.

These rejections are believed to be moot in view of the cancellation of claims 1-7. Furthermore, the Applicants respectfully submit that these rejections are inapplicable to new claims 8-15 for the following reasons.

New claim 8 recites an image decoding apparatus for decoding image data including plural image sequences. The image decoding apparatus of new claim 8 comprises a memory having plural memory regions respectively corresponding to the plural image sequences, and being operable to hold decoding information to be used when the image data of the respective image sequences are decoded. The image decoding apparatus of new claim 8 also comprises a memory region selection unit operable to select one of the memory regions in the memory based on image identifying information which indicates a target image sequence to be decoded, the one of the

memory regions corresponding to the target image sequence to be decoded. Furthermore, the image decoding apparatus of new claim 8 comprises a temporary data holding unit operable to temporarily hold the decoding information of the target image sequence transferred from the memory, and a decoding information transfer unit operable to transfer the decoding information of the target image sequence collectively from the one of the memory regions selected by the memory region selection unit to the temporary data holding unit. In addition, the image decoding apparatus of new claim 8 comprises a decoder operable to perform decoding on the image data of the target image sequence based on the decoding information held in the temporary data holding unit.

New claim 12 recites an image decoding method for performing decoding on image data comprising plural image sequences based on respective decoding information of the image sequences. The method of new claim 12 comprises selecting a memory region corresponding to a target image sequence to be decoded, from plural memory regions respectively corresponding to the image sequences, in a memory for holding decoding information to be used when the image data of the respective image sequences are decoded, based on image identifying information which indicates the target image sequence. Further, the method of new claim 12 comprises transferring decoding information of the target image sequence collectively from the selected memory region to a temporary data storage unit for temporarily holding the decoding information of the target image sequence, and decoding the image data of the target image sequence, with reference to the decoding information stored in the temporary data storage unit.

Accordingly, the image decoding apparatus of new claim 8 and the image decoding method of new claim 12 recite that, when decoding information corresponding to a target image sequence which is to be decoded is read from a memory region storing decoding information corresponding to the plural image sequences, the plural decoding information for the target image sequence are collectively transferred from the memory region to a temporary data holding unit. New claims 8 and 12 further recite that access is then carried to the temporary data holding unit to obtain the necessary decoding information for the target image sequence.

New claim 11 recites an image decoding apparatus for decoding image data including plural image sequences. The image decoding apparatus of new claim 11

comprises a memory having plural memory regions respectively corresponding to the plural image sequences, and being operable to hold decoding information including plural parameters to be used when the image data of the respective image sequences are decoded. The image decoding apparatus of new claim 11 also comprises a parameter storage position decision unit operable to decide storage positions of parameters, which are required when a target image sequence to be decoded is decoded, in one of the plural memory regions corresponding to the target image sequence to be decoded based on image identifying information which indicates the target image sequence. Further, the image decoding apparatus of new claim 11 comprises a decoder operable to perform decoding on the target image sequence based on the parameters stored in the parameter storage positions decided by the parameter storage position decision unit. New claim 11 defines that the parameter storage position decision unit is operable to specify one of the plural memory regions corresponding to the target image sequence based on the image identifying information, and to decide the storage positions of the parameters which are required when the target image sequence is decoded on the specified one of the plural memory regions based on a type of the required parameters.

New claim 14 recites an image decoding method for decoding image data including plural image sequences. The method of new claim 14 comprises selecting decoding information of a target image sequence to be decoded from decoding information respectively including plural parameters of the image sequences, the decoding information being stored in a memory and being used when the image data of the respective image sequences are decoded. The method of new claim 14 also comprises deciding storage positions in the memory of parameters which are required for decoding, among the plural parameters constituting the selected decoding information, and decoding the image data of the target image sequence based on the parameters stored in the decided storage positions. Further, new claim 14 also recites that in the deciding of the storage positions of the parameters, the memory region corresponding to the target image sequence is specified based on image identifying information, and the storage positions in the specified memory region of the parameters which parameters are required when the target image sequence is decoded are decided based on a type of the parameters.

Accordingly, the image decoding apparatus of new claim 11 and the image decoding method of new claim 14 recite that respective decoding information for the image sequences are stored in memory regions respectively corresponding to the plural image sequences. Further, new claims 11 and 14 recite that the parameters which are necessary for decoding the target image sequences are stored in a specified memory region based on a type of the required parameters.

In item 18 on page 10 of the Office Action, the Examiner referred to the second paragraph of page 10 of the original specification, which provides:

In the decoding unit 240, on the basis of the parameter data Dp as decoding information stored in the register 211, decoding is performed on the video stream Vs corresponding to a target frame of a predetermined image sequence, with reference to the reference image data Dr stored in the memory 200b.

The Examiner concluded that the parameter data Dp is inputted in the memory 200b and is used for decoding, and that it would have been obvious to add register(s) into the decoding unit 240 for recording the parameter data.

However, in the image decoding apparatus of the AAPA as illustrated in Figure 12, it is required, when reading out the decoding the information for decoding a target image sequence from the storage unit storing the decoding information corresponding to the plural image sequences at the time the target image sequence is decoded, to select the target image sequence that is to be decoded among plural images sequences, and to further select necessary decoding information among plural decoding information for the selected target image sequence that is to be decoded.

In contrast to the AAPA, as described, new claims 8 and 12 recite that, when decoding information corresponding to a target image sequence which is to be decoded is read from a memory region storing decoding information corresponding to the plural image sequences, the plural decoding information for the target image sequence are collectively transferred from the memory region to a temporary data holding unit. New claims 8 and 12 further recite that access is then carried to the temporary data holding unit to obtain the necessary decoding information for the target image sequence.

Thus, the constituent elements of new claims 8 and 12 are markedly different from the AAPA, which simply provides a memory for holding decoding information in a decoding unit that is required for decoding a target image sequence.

Furthermore, the AAPA requires a selection of a target image sequence among plural images sequences and a further selection of necessary decoding information for the selected target image sequence among plural decoding information. However, by collectively transferring plural decoding information for the target image sequence, and accessing the temporary data holding unit to obtain the necessary decoding information for the target image sequence, new claims 8 and 12 make it possible to only access the temporary information holding unit when decoding the same target image sequence. Therefore, the inventions of new claims 8 and 12 provide a high speed decoding process for the image sequences.

Accordingly, new claims 8 and 12 are neither anticipated nor rendered obvious by the AAPA since the AAPA clearly fails to disclose or suggest (a) a memory having plural memory regions respectively corresponding to the plural image sequences, and being operable to hold decoding information to be used when the image data of the respective image sequences are decoded, (b) a temporary data holding unit operable to temporarily hold the decoding information of the target image sequence transferred from the memory, and (c) a decoding information transfer unit operable to transfer the decoding information of the target image sequence collectively from the one of the memory regions selected by the memory region selection unit to the temporary data holding unit, as recited in new claims 8 and 12.

Furthermore, because of the clear distinctions discussed above, one skilled in the art would not have been motivated to modify the AAPA in such a way as to result in, or render obvious, the inventions of new claims 8 and 12.

Therefore, new claims 8 and 12, as well as new claims 9-10 and 13 which depend therefrom, are clearly allowable over the AAPA since the AAPA clearly fails to disclose or suggest each and every limitation of new claim 8 and 12.

Further, as recited in new claims 11 and 14, respective decoding information for the image sequences are stored in memory regions respectively corresponding to the plural image sequences, and the parameters which are necessary for decoding the target image sequences are stored in a specified memory region based on a type of the required parameters. This novel feature of the present invention is markedly different from the above-described referenced description of the AAPA which the Examiner relied on to

reject original claims 1-7. As described above, the AAPA merely provides a memory in the decoding unit for holding decoding information that is required for decoding.

In contrast to the AAPA, new claims 11 and 14 recite that, when reading decoding information corresponding to an image sequence from the storage unit storing decoding information corresponding to the plural image sequences, memory regions are switched according to the switching of the target sequence, and at the time of decoding the target image sequence, necessary information can be obtained by accessing a specific storage position according to the type of the necessary parameter in each region. Thus, the inventions of new claims 11 and 14 result in high speed processing for the respective image sequences.

These features of new claims 11 and 14 are not disclosed or suggested by the AAPA. In particular, the AAPA clearly fails to disclose or suggest (a) a parameter storage position decision unit operable to decide storage positions of parameters, which are required when a target image sequence to be decoded is decoded, in one of the plural memory regions corresponding to the target image sequence to be decoded based on image identifying information which indicates the target image sequence, where (b) the parameter storage position decision unit is operable to specify one of the plural memory regions corresponding to the target image sequence based on the image identifying information, and to decide the storage positions of the parameters which are required when the target image sequence is decoded on the specified one of the plural memory regions based on a type of the required parameters, as recited in new claims 11 and 14.

Accordingly, new claims 11 and 14 are neither anticipated nor rendered obvious by the AAPA since the AAPA clearly fails to disclose or suggest each and every limitation of new claims 11 and 14.

Furthermore, because of the clear distinctions discussed above, one skilled in the art would not have been motivated to modify the AAPA in such a way as to result in, or render obvious, the inventions of new claims 11 and 14.

Because of the clear distinctions discussed above, it is submitted that the teachings of AAPA clearly do not meet each and every limitation of new claims 8, 11, 12 and 14.

Furthermore, as described above, the present invention, as recited in new claims 8, 11, 12 and 14, has a novel characteristic of collectively transferring decoding information and its data storage in a memory, as well as a novel characteristic of speeding up decoding. These characteristics are not disclosed, suggested or even contemplated by the AAPA.

Accordingly, it is submitted that the distinctions between the present invention and the AAPA are such that a person having ordinary skill in the art at the time the invention was made would not have been motivated to modify the AAPA in such a manner as to result in, or otherwise render obvious, the present invention as recited in new claims 8, 11, 12 and 14.

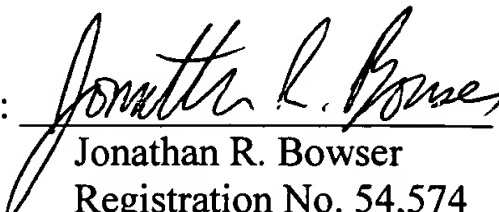
Therefore, it is submitted that the new claims 8, 11, 12 and 14, as well as new claims 9-10, 13 and 15-16 which depend therefrom, are clearly allowable over the prior art as applied by the Examiner.

In view of the foregoing amendments and remarks, it is respectfully submitted that the present application is clearly in condition for allowance. An early notice thereof is respectfully solicited.

If, after reviewing this Amendment, the Examiner feels there are any issues remaining which must be resolved before the application can be passed to issue, the Examiner is respectfully requested to contact the undersigned by telephone in order to resolve such issues.

Respectfully submitted,

Takanori ISHIDA et al.

By: 
Jonathan R. Bowser
Registration No. 54,574
Attorney for Applicants

JRB/nrj
Washington, D.C. 20006-1021
Telephone (202) 721-8200
Facsimile (202) 721-8250
August 22, 2005